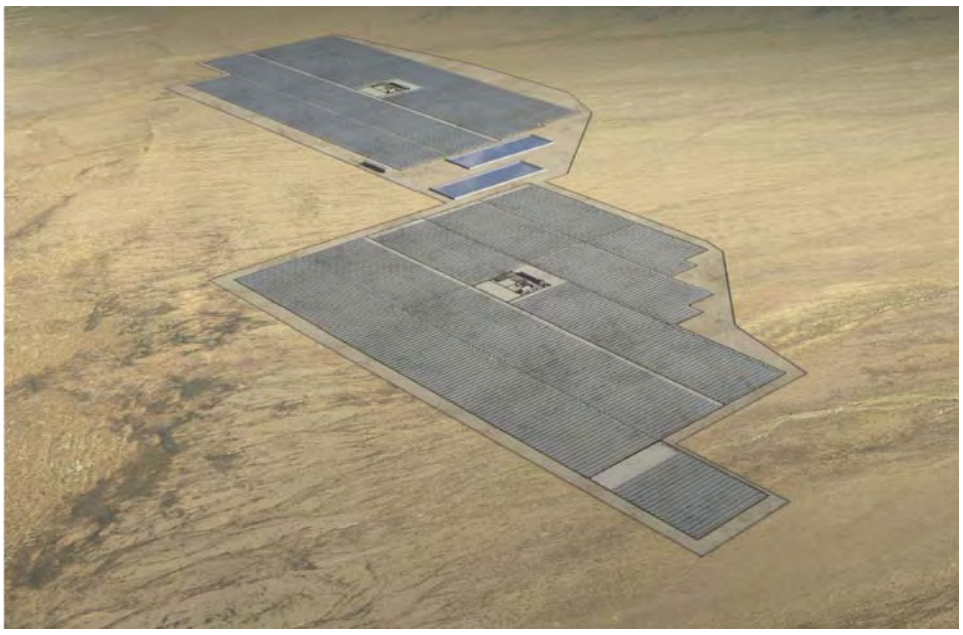
BLM

Bureau of Land Management

PLAN AMENDMENT/FINAL EIS FOR THE GENESIS SOLAR ENERGY PROJECT

Volume 1 of 3



August 2010

EXECUTIVE SUMMARY

ES.1 Background and Organization

In August 2007, the United States Bureau of Land Management (BLM) California Desert District and the California Energy Commission (CEC) and entered into a Memorandum of Understanding (MOU) to jointly develop the environmental analysis documentation for solar thermal projects which are under the jurisdiction of both agencies. Consistent with that MOU, the BLM and the CEC prepared a joint environmental compliance document to address the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) for the Genesis Solar Energy Project (GSEP). Specifically, a Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) was prepared and was circulated for agency and public review and comment between April 9, 2010, and July 8, 2010. The SA/DEIS is incorporated by reference in this Plan Amendment/Final Environmental Impact Statement (PA/FEIS).

The BLM and the CEC prepared separate final documents for compliance with NEPA and CEQA, respectively. Specifically, the BLM prepared this PA/FEIS for the GSEP. The SA/DEIS was the primary reference used in preparing this FEIS. The SA/DEIS is incorporated by reference in this FEIS. The comments received on the DEIS are addressed in this PA/FEIS. After the publication of this PA/FEIS, the BLM will prepare a Record of Decision (ROD) regarding the Proposed Action (Agency Preferred Alternative). The publication of the ROD in the Federal Register is the final step required of the BLM to meet the requirements of NEPA for the GSEP.

ES.2 Lead Agencies' Roles and Approvals

The BLM's authority for the Proposed Action includes the Federal Land Policy and Management Act (FLPMA) of 1976, Section 211 of the Energy Policy Act, and BLM's Solar Energy Development Policy. The FLPMA authorizes the BLM to issue right-of-way (ROW) grants for renewable energy projects. BLM's authority also extends to the BLM lands in the Palm Springs/South Coast Field Office, which are governed by the California Desert Conservation Area Plan (1980, as amended) (CDCA Plan). Because the CDCA Plan would need to be amended to allow the GSEP on the proposed site, BLM would also oversee that CDCA Plan amendment process for the project.

The CEC has the exclusive authority to certify the construction, modification, and operation of thermal electric power plants in California which generate 50 or more MW. The CEC certification is in lieu of any permit required by State, regional, or local agencies. The CEC must review power plant Applications for Certification (AFCs) to assess potential environmental impacts and

compliance with applicable laws, ordinances, regulations, and standards (LORS). The CEC analyses regarding the BSPP in the SA/DEIS were prepared in accordance with the requirements of CEQA.

ES.3 Purpose and Need

BLM Purpose and Need

NEPA guidance published by the Council on Environmental Quality (CEQ) states that environmental impact statements' Purpose and Need section "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the Proposed Action" (40 CFR 1502.13). The following discussion sets forth the purpose of and need for the action as required under NEPA.

The BLM's purpose and need for the GSEP is to respond to Genesis Solar, LLC's application under Title V of FLPMA (43 U.S.C. 1761) for a ROW grant to construct, operate, maintain and decommission a solar thermal facility on public lands in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws. The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW grant to Genesis Solar, LLC for the proposed GSEP. The BLM's action will also include consideration of amending the California Desert Conservation Area Plan (CDCA) 1980, as amended concurrently. The CDCA, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission not identified in that plan be considered through the land use plan amendment process. If the BLM decides to approve the issuance of a ROW grant, the BLM will also amend the CDCA as required.

In conjunction with FLPMA, BLM authorities include:

1. Executive order 13212, dated May 18, 2001, which mandates that agencies act expediently and in a manner consistent with applicable laws to increase the "production and transmission of energy in a safe and environmentally sound manner."

2. The Energy Policy Act 2005 (EPAct), which sets forth the "sense of Congress" that the Secretary of the Interior should seek to have approved non-hydropower renewable energy projects on the public lands with a generation capacity of at least 10,000 MW by 2015.

3. Secretarial Order 3285A1, dated March 11, 2009 and amended on Feb 22, 2010, which "establishes the development of renewable energy as a priority for the Department of the Interior."

Department of Energy Purpose and Need

The Applicant submitted an application to DOE on June 4, 2010 for a Federal loan guarantee for the GSEP in response to a DOE competitive solicitation, "Commercial Technology Renewable Energy Generation Projects Under the Financial Institution Partnership Program." This solicitation was issued under section 1705, Title XVII, of the Energy Policy Act of 2005 (EPAct). Section 406 of the American Recovery and Reinvestment Act of 2009 (the "Recovery Act")

amended EPAct, adding section 1705, designed to address the current economic conditions of the Nation, in part, through eligible renewable projects to generate electricity, to commence construction no later than September 30, 2011. DOE is carrying out a detailed financial, technical, and legal evaluation of the project in response to that solicitation, and is in the course of negotiating the terms and conditions of a possible federal loan guarantee pursuant to its procedures set out at 10 CFR Part 609. DOE is a cooperating agency on this EIS pursuant to a Memorandum of Agreement between DOE and BLM signed in January 2010, and would use this EIS to meet its NEPA requirements in making a determination of funding.

Title XVII of the Energy Policy Act of 2005 (EPAct), P.L. 109-58 as amended by section 406 of the American Recovery and Reinvestment Act of 2009, P.L. 111-5 (the "Recovery Act"), established a Federal loan guarantee program for eligible energy projects that employ innovative technologies. Title XVII authorizes the Secretary of Energy to make loan guarantees for various types of projects, including those that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued." Section 406 of the Recovery Act added section 1705, which is designed to address the current economic conditions of the nation, in part, through eligible renewable and transmission projects to commence construction no later than September 30, 2011. The primary purposes of the Recovery Act are job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and state and local fiscal stabilization. The purpose and need for DOE action would be to comply with its mandate by selecting eligible projects that meet the goals of EPAct and the Recovery Act.

Energy Commission Project Objectives

The CEQA guidelines require a clearly written statement of objectives to guide the lead agency in developing a reasonable range of alternatives and aid decision-makers in preparing findings or a statement of overriding considerations. CEQA specifies that the statement of objectives should include the underlying purpose of the project (Section 15126.6(a)). After considering the objectives set out by the applicant, the Energy Commission identified the following basic project objectives, which are used to evaluate the viability of alternatives in accordance with CEQA:

1. To construct a utility-scale solar energy project of up to 250 MW and interconnect directly to the CAISO Grid while minimizing additions to electrical infrastructure; and

2. To locate the facility in areas of high solar insolation.

3. In addition, when considering retention or elimination of alternative renewable technologies, in addition to evaluating the likelihood of reducing or eliminating the potential impacts of Genesis Solar Energy Project at its proposed site, staff evaluated whether alternative technologies could meet the following key project objectives:

4. To provide clean, renewable electricity and to assist Southern California Edison (SCE) in meeting its obligations under California's Renewable Portfolio Standard Program (RPS);

5. To assist SCE in reducing its greenhouse gas emissions as required by the California Global Warming Solutions Act; and

6. To contribute to the achievement of the 33% renewables RPS target set by California's governor and legislature

7. To complete the review process in a timeframe that would allow the applicant to start construction or meet the economic performance guidelines by December 31, 2010 to potentially qualify for the 2009 ARRA cash grant in lieu of tax credits for certain renewable energy projects.

ES.4 Proposed Action and Plan Amendment

Genesis Solar, LLC, (Applicant) proposes to construct, operate, maintain and decommission the GSEP or Proposed Action which includes a 250 MW solar generating facility, 230-kV transmission line (gen-tie) and ancillary facilities (access road and natural gas pipeline) on BLM-administered land, approximately 25 miles west of the city of Blythe and five miles north of the Interstate-10 freeway (see Figure 1-1). The Applicant is seeking a right-of-way (ROW) grant for approximately 4,640 acres. Construction and operation of the GSEP would disturb a total of about 1,808 acres. Remaining acreage that would not be disturbed may not be part of the ROW grant.

The GSEP would include the construction and operation of two adjacent, independent, nearly identical power block units (Units) of 125 MW nominal capacity each for a total nominal capacity of 250 MW commercial solar parabolic trough generating station and ancillary facilities (see Figure 2-1 and Figure 2-2). The GSEP would be constructed in two phases. Each phase is designed to build one Unit to provide a approximately 125 MW of electricity and would occupy an estimated 900 acres. The GSEP would be connected to Southern California Edison's planned Colorado River Substation, which would be located approximately 11 miles southeast of the GSEP area, via the proposed gen-tie line, a 230 kV transmission line.

The Applicant did not request a CDCA Plan amendment directly. Nonetheless, the BLM has determined that a CDCA Plan amendment would be required if a ROW were granted for a solar power generating facility on the proposed site. Regardless of whether the proposed project is approved, the BLM could elect to amend the CDCA Plan. Consequently, the following range of outcomes of the BLM's potential CDCA Plan amendment process is as follows:

PA1 – The CDCA (1980, as amended) would be amended to approve this site for development of this facility And all other types of solar energy development. (This is the proposed land use plan amendment.)

PA2 – The CDCA Plan (1980, as amended) would not be amended. (This is No Action Alternative A, discussed in Table ES-1.)

PA3 – The CDCA Plan (1980, as amended) would be amended to identify the GSEP application area as unsuitable for any type of solar energy development. (This is a no project alternative called "No Action Alternative B" and is discussed in Table ES-1.)

PA4 – The CDCA Plan (1980, as amended) would be amended to identify the GSEP application area as suitable for any type of solar energy development. (This is a no project alternative called "No Action Alternative C" and is discussed in Table ES-1.)

ES.5 Ancillary/Connected/Cumulative Actions

Telecommunications and Telemetry

Telecommunications services would be provided by a local provider via either fiber optic cable or microwave. Fiber optic cable would be buried in a shallow trench or strung on the power distribution line or gen-tie line, or a combination of both methods within the disturbed areas of the other linear facilities. (See Figure 2-8)

Natural Gas Pipeline

A new eight-inch diameter, 6.5-mile long natural gas pipeline would be constructed to connect the project to an existing Southern California Gas (SCG) pipeline situated south of I-10. The line would be buried with a minimum three feet of cover depending on location.

Construction of the gas pipeline would be built to SCG standards and would take approximately three to six months. Most major pieces of pipeline construction equipment would remain along the pipeline ROW during construction with storage and staging of equipment and supplies located at the site or other acceptable site selected by SCG at the time construction is underway. Excavated earth material would be stored within the construction ROW.

Distribution Line

Construction power would be provided by the local distribution system and routed to the site along wood poles within the 230 kV ROW (see Figure 2-8).

Colorado River Substation Expansion

This Proposed Action involves expanding the already approved, but not yet constructed, 500 kV SCE switchyard by approximately 65 acres into a full 500/220 kV substation on approximately 90 acres of land.

Cumulative Scenario

There are a large number of renewable energy and other projects proposed throughout the California desert that were identified as potentially contributing to cumulative environmental impacts. Those cumulative projects are discussed in detail in Section 4.1.4, Cumulative Scenario Approach.

ES.6 Alternatives to the Proposed Action

Table ES-1 summarizes the GSEP, the Agency Preferred Alternative, as well as the other Alternatives evaluated in this PA/FEIS. The GSEP is the originally Proposed Action. All of these Alternatives are described in detail in Chapter 2, Proposed Action and Alternatives.

TABLE ES-1
SUMMARY OF ALTERNATIVES EVALUATED IN THE PA/FEIS

Alternative	Comments
Proposed Action 250 MW; 1,807 acres disturbed BLM amends CDCA Plan for GSEP	This is the GSEP and was the original Proposed Action.
Dry Cooling Alternative 250 MW; 1,807 acres disturbed BLM amends CDCA Plan for GSEP	This is an alternative that would use dry cooling technology to generate the same energy output using the same footprint, but would reduce water consumption by 87%; it also is the Agency Preferred Alternative.
Reduced Acreage Alternative 125 MW (50 percent of MW of the GSEP); 1,012 acres disturbed (795 acres less than the GSEP) BLM amends CDCA Plan for Reduced Acreage Alternative	This is a reduced project that would develop only one of the two Units proposed under the GSEP. The same solar trough technology would be used as for the GSEP.
No Action Alternative A BLM does not approve the ROW Grant for the GSEP BLM does not amend the CDCA Plan	This No Action Alternative was evaluated in the SA/DEIS under both CEQA and NEPA.
No Project Alternative B BLM does not authorize the ROW grant for the GSEP; BLM amends the CDCA Plan to make the project site unavailable for any type of solar energy development.	This No Project Alternative was evaluated in the SA/DEIS under NEPA only. This is not a typical “No Project” Alternative because the BLM would take action to amend the CDCA Plan under this Alternative. However, it was evaluated because it provided an opportunity for the BLM to consider the effects of not approving the ROW grant application and also amending the CDCA Plan to make the specific GSEP site unavailable for future solar development.
No Project Alternative C BLM does not authorize the ROW grant for the GSEP; BLM amends the CDCA Plan to make the project site available for any type of solar energy development.	This No Project Alternative was evaluated in the SA/DEIS under NEPA only. This is not a typical “No Project” Alternative because the BLM would take action to amend the CDCA Plan under this Alternative. However, it was evaluated because it provided an opportunity for the BLM to consider the effects of not approving the ROW grant application and also amending the CDCA Plan to make the specific GSEP site available for future solar development.

ES.7 Affected Environment

The GSEP would be located on public land managed by the BLM approximately six miles north of the I-10 freeway and 25 miles west of the City of Blythe, California. The Proposed Action includes a 230-kilovolt (kV) transmission line that would interconnect with the regional grid at Southern California Edison’s (SCE) planned Colorado River Substation about 11 miles southeast the plant site. The Applicant has applied for a right-of-way (ROW) grant from BLM for approximately 4,640 acres of flat desert terrain. Within these 4,640 acres, construction and operation would disturb approximately 1,808 acres. Remaining acreage that would not be disturbed would not be part of the ROW grant.

The Genesis Solar Energy Project (GSEP) would be located within the northeastern portion of Chuckwalla Valley, an area east of Palm Springs. The range of the Chuckwalla Valley is from 400 feet above mean sea level at Ford Dry Lake to approximately 1,800 feet above mean sea level along some of the bajadas that occur west of Desert Center, California with the surrounding mountains rising to over 3,000 above mean sea level (GSEP 2009a). Depending on the published reference, the GSEP site is located in either the southeastern portion of the Mojave Desert geomorphic province (CGS 2002a), or the northeastern quarter of the Colorado Desert geomorphic province (Norris and Webb 1990), in the Mojave Desert of Southern California near the Arizona border.

The GSEP area supports four major upland natural communities. The majority of the GSEP Disturbance Area supports Sonoran creosote bush scrub; the eastern portion of the GSEP Disturbance Area also supports stabilized and partially stabilized desert dunes. A small amount of playa and sand drifts over playa occur within the GSEP Disturbance Area along the margins of Ford Dry Lake. The larger surveyed area, the GSEP area, supports chenopod scrub, and desert wash woodland in addition to the two vegetation communities mentioned above (GSEP 2009a). All of these communities except the Sonoran creosote bush scrub are considered sensitive according to the NECO plan. Additionally, the southern linear facility route was determined by the applicant to support wash-associated, microphyll riparian woodland communities (GSEP 2009f, BIO-DR-70). Dry desert wash woodland and microphyllous riparian vegetation are described in detail in the section on Ephemeral Washes/ Waters of the State. A variety of wildlife occupies the habitats on and in the vicinity of the project site.

The GSEP Site lies on a broad, relatively flat, southward sloping surface dominantly underlain by alluvial deposits derived from the Palen Mountains to the north and the McCoy Mountains to the east. The alluvial deposits have created two distinct landform types and several discernable landform ages. The deposits immediately adjacent to the mountains have formed alluvial fans from multiple identifiable sources, and multiple fan surfaces have coalesced into a single bajada surface that wraps around each of these mountain fronts. Between the bajada surfaces from each mountain chain is a broad valley-axial drainage that extends southward between the mountains and drains to the Ford Dry Lake playa, located about 1 mile south of the Site (WPAR 2009a).

ES.8 Environmental Consequences

Table ES-2 summarizes the environmental impacts that would occur as a result of the GSEP and Alternatives by environmental parameter. Appendix G, Conditions of Certification, identify the mitigation measures, project features, and other measures included to avoid or substantially reduce adverse impacts. The unavoidable adverse impacts that would remain after mitigation are also discussed at the end of each section in Chapter 4.

TABLE ES-2
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Air	• *Construction*: NOx=182 tons/yr; VOC=46 tons/yr; CO=363 tons/yr; PM10=41 tons/yr; PM2.5=16 tons/yr; and Sox=0.47 tons/yr • *Operations*: NOx= 3 tons/yr; VOC=16 tons/yr; CO=7 tons/yr; PM10=21 tons/yr; PM2.5=7; tons/yr; and Sox=0.02 tons/yr • *Decommissioning*: Comparable in type and magnitude, but likely to be lower than, the construction emissions	Slightly higher construction emissions; 3.8-tons per year reduction in operational particulate emissions; slightly lower operational emissions.	Similar to the Proposed Action	Likely delayed impact similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.	No impact, or impact specific to a future use other than solar energy generation.	Short term: no impact Long term: Similar to Proposed Action
Global Climate Change	• *Construction*: GHG: 52,974 CO_2-Equivalent and loss in carbon uptake of about 2,584 MT of CO_2 per year due to vegetation removal • *Operations*: 4,133 CO_2-Equivalent • *Decommissioning*: Comparable in type and magnitude, but likely to be lower than, the construction emissions	Slightly reduced from the Proposed Action	Approximately 50% less than the Proposed Action	Likely delayed impact similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.	No impact, or impact specific to a future use other than solar energy generation.	Similar to the Proposed Action
Cultural	• 27 sites considered to be significant (12 prehistoric and 15 historic) • Possibly additional resources yet to be discovered during construction • The integrity of setting and integrity of feeling of two potential archaeological/historic landscapes	Same as Proposed Action	Impacts are reduced to 20 known sites.	Likely delayed impact similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.	No impact, or impact specific to a future use other than solar energy generation.	Similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.
Environ-mental Justice	No Impact	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Lands and Realty	• Minimal and mitigable impacts to designated corridors and Interstate 10 from overhead gen-tie power line and underground pipeline crossing. • No impacts to existing uses.	Similar to the Proposed Action	Similar to the Proposed Action	Likely delayed impact similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.	No impact, or impact specific to a future use other than solar energy generation.	Similar to the Proposed Action. Required acreage could be less, approximately the same, or more than the Proposed Action.
Livestock Grazing	No Impact	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

TABLE ES-2 (Continued)
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Minerals	No Impact	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Multiple Use Classes	• *Construction*: 1800 acres of MUC Class M (Moderate) affected. • *Operations*: restriction of multiple use opportunities on the site to a single dominant use.	Same as Proposed Action	Approximately 50% less than the Proposed Action	No Impact; similar impacts if other utility-scale solar power facilities built in future.	No Impact.	Same as Proposed Action.
Noise	• *Construction*: short-term elevated noise levels at the prisons nine miles from the GSEP site would occur associated with high pressure steam blow. • *Operations*: No impact; no sensitive noise receptors within 5 miles; at 5 miles, noise levels would be approximately 30 dBA.	Similar to the Proposed Action, though slightly reduced.	Similar to the Proposed Action as there are no noise sensitive receptors in the vicinity.	Similar to the Proposed Action	Similar to the Proposed Action	Similar to the Proposed Action
Paleonto-logical	• *Construction*: Damage and/or destruction of paleontological resources; possible net gain to the science of paleontology depending on fossils found. • *Operations*: No Impact. • *Decommissioning*: No Impact.	Same as Proposed Action	Approximately 50% less than the Proposed Action	No negative impact or potential benefits to science of paleontology. Long term impacts likely similar to Proposed Action.	No negative impact or potential benefits to science of paleontology. Impacts similar to the Proposed Action likely to occur in other locations.	Similar but reduced/increased proportionate to size of future development.
Public Health & Safety	• *Construction*: Risks to public health and contamination associated with construction equipment; safety risk of encountering unexploded munitions; risks of encountering abandoned mined lands. • *Operations*: large quantities of natural gas and Therminol VP1 would be used; no short- or long-term adverse human health effects are expected; risks of encountering abandoned mined lands; transmission line safety and nuisance hazards; traffic and transportation safety, including aviation safety; impacts to public and private airfields; and worker safety and fire protection impacts; and impacts associated with geologic hazards.	Similar to the Proposed Action	Similar to the Proposed Action	Similar to the Proposed Action	Similar to the Proposed Action	Similar to the Proposed Action

TABLE ES-2 (Continued)
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Recreation	• *Construction*: impacts from noise, fugitive dust, and truck and other vehicle ingress and egress to the construction site. • *Operations*: site not available for recreational use; minimal impacts to other lands in the vicinity of the proposed site due to increased usage; site viewable by users in nearby elevated areas. • *Decommissioning*: dust and noise impacts similar to construction; after decommissioning area would be reclaimed for recreational use.	Operation, maintenance, and closure similar to Proposed Action.	Approximately 50% less than the Proposed Action	Similar to the Proposed Action.	Potential impacts could range from no impact to greater impact, depending on future site use.	Similar but reduced/increased proportionate to size of future development.
Social & Economics	• *Construction:* Employment of 646 workers (average) and 1,085 workers (peak). Most, if not all, expected to live within two hours of site. • Any temporary lodging demand met by existing housing or lodging. No new housing or motel development induced. • Total direct construction spending benefits of $165 million on labor and $14.5 million on materials. • Additional total indirect and induced spending benefits of $136.8 million and 358 jobs. • *Operations:* Annual employment of 65 workers of which at least 50% expected to live within two hours of site. • Any in-migration housing demand met by existing housing. No new housing growth induced. • Annual direct spending benefits of $6 million on labor and $0.5 million on materials. • Additional total indirect and induced spending benefits of $3.9 million and 32 jobs. • *Decommission:* Temporary spending and employment benefit from deconstruction and site restoration work. Subsequent long term adverse impact from lost project jobs and spending.	Same as Proposed Action	Similar but reduced proportionate to size of alternative	Similar to the Proposed Action	No Impact	Similar to the Proposed Action

TABLE ES-2 (Continued)
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Soils	• *Construction*: total earth movement of approximately 1 million cubic yards. Wind erosion generated soil loss of 29.7 tons per acre per year, reduced from 72.88 tons per acre per year without the GSEP. Water erosion generated soil loss of 21.95 tons per acre per year, increased from 1.53 tons per acre per year without the GSEP. • *Operations*: Wind erosion generated soil loss of 1.25 tons per acre per year, reduced from 72.88 tons per acre per year without the GSEP. Water erosion generated soil loss of 6.93 tons per acre per year, increased from 1.53 tons per acre per year without the GSEP.	Similar to Proposed Action	Peak construction: same as Proposed Action. Long term construction: less than Proposed Action. Operation: less than Proposed Action. Aeolian erosion and transport would be reduced to near zero. Similarly, the impacts on the Chuckwalla and Palen-McCoy sand corridors or the eastern wash complex would be removed.	No impact; potential for similar impacts in other locations.	No impact; potential for similar impacts in other locations.	Similar to Proposed Action
Special Designations	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Transportation and Public Access – Off Highway Vehicle Resources	• *Construction*: temporary disturbance to motorized vehicles on local routes; traffic hazards from construction worker commuting and parking; increased traffic from construction activities; damage to roadways. Temporary closure of up to five OHV routes during construction of linears. • *Operations*: increased opportunities for vandalism, illegal cross-county use and other disruptive behavior from off-highway vehicles (OHV). • No impact to overall access for wilderness recreation; some impact to sightseeing and day use touring by OHV users.	Similar to Proposed Action.	Similar to Proposed Action	No impact to OHV routes and values; similar impacts to transportation.	No impact to OHV routes and values; similar impacts to transportation.	Similar impacts as Proposed Action.

TABLE ES-2 (Continued)
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Vegetation	1,773 acres vegetation communities lost; 90 acres ephemeral drainages lost; 196.5 acres sand dune habitat lost; 4 special status plant species impacted	Same as the Proposed Action in acreage, though indirect effects on vegetation may be reduced by reduction in groundwater pumping.	1,039 acres vegetation communities lost; 88 acres ephemeral drainages lost; 127.5 acres sand dune habitat lost; 4 special status plant species impacted. Indirect impacts on vegetation from groundwater use reduced by 50%. Eastern sand transport corridor not impacted.	Short term: no impact Long term: Similar to Proposed Action	No Impact	Short term: no impact Long term: Similar to Proposed Action
Visual	• *Construction*: Mitigable short-term impacts from construction lighting and visible dust plumes; minor to moderate effects from large-scale visual disturbance in the landscape. • *Operations*: Short-term adverse and unavoidable impacts from glint and glare. Minor to moderate long-term impacts for ground-level viewers. Long-term adverse and unavoidable impacts in the cumulative scenario for dispersed recreational viewers in surrounding mountains. • *Decommissioning*: Mitigable short-term impacts prior to successful restoration.	Similar to the Proposed Action; but dry cooling alternative would slightly increase the visual contrast of the GSEP from KOP-1.	Similar to the Proposed Action; the visual contrast remains the same for KOP-3, but would be slightly reduced from KOPs 1 and 2, as well as elevated viewpoints.	No Impact	No Impact	Future solar energy development could be expected to affect visual resources to the same degree and extent as referenced in the Proposed Action.
Water	• *Construction and Operation:* Groundwater extraction of up to 1,368 acre feet per year for 3 years of construction, and 1,644 acre feet per year for operation from the Chuckwalla Valley Groundwater Basin. A fraction of this water could be drawn indirectly from induced flows from the Colorado River. • Mitigable alteration of stormwater flows and drainage, including re-routing of existing flowpaths. • Mitigable surface water quality effects including use of detention basis, spreading fields, drainage channels, and spill cleanup facilities during operation.	Similar to the Proposed Action, although the operational use of groundwater is reduced to 218 acre feet per year.	Approximately 50% less than Proposed Action for groundwater consumption, similar to the Proposed Action for all others.	Short term: no impact Long term: Similar to Proposed Action	No Impact	Short term: no impact Long term: Similar to Proposed Action

TABLE ES-2 (Continued)
SUMMARY OF IMPACTS BY ALTERNATIVE

Resource	ALTERNATIVES					
	Proposed Action	**Dry Cooling Alternative**	**Reduced Acreage Alternative**	**No Action Alternative**	**No Project Alternative B**	**No Project Alternative C**
Water (cont.)	• *Decommissioning*: Mitigable water quality effects due to use of heavy machinery and re-grading of site to match adjacent topography.					
Wild Horse & Burros	No Impact	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Wildland Fire Ecology	Increase in threat of wildland fires in area during construction (due to increased vehicle use) and during operation (due to increased likelihood of invasive annual plant spread).	Similar to Proposed Action	Similar to Proposed Action	Short term: no impact Long term: Similar to Proposed Action	No Impact	Short term: no impact Long term: Similar to Proposed Action
Wildlife	• *Construction*: 1,774 acres wildlife habitat lost; 9 special status wildlife species impacted • *Operations*: disruption of migratory patterns; death or injury to individuals from striking powerlines, mirrors, arrays, poles or being struck by vehicles; increased predation.	Same as the Proposed Action in acreage, though indirect effects on vegetation and related resources for wildlife may be reduced by reduction in groundwater pumping.	*Construction*: 1,039 acres wildlife habitat lost; 9 special status wildlife species impacted on 50% fewer acres than Proposed Action *Operations*: Similar to Proposed Action	Short term: no impact Long term: Similar to Proposed Action	No Impact	Short term: no impact Long term: Similar to Proposed Action

ES.9 Areas of Controversy and Issues for Resolution

Based on input received from agencies, organizations, Native Americans and Tribal Governments, and members of the general public during the scoping for the SA/DEIS and in comments on the SA/DEIS, several areas of controversy related to the GSEP are:

- Opposition to the placement of a large solar project on essentially undisturbed desert land
- Support for locating renewable energy projects in urban or previously-developed areas
- Concern regarding the impacts of this large project on biological and cultural resources
- Concern regarding GHG emissions and climate change
- Concern regarding groundwater use
- Concern regarding the range of alternatives considered

Extensive comments were received during the scoping process for the GSEP. The scoping process and public input received during that process are provided in detail in Appendix C, Results of Scoping.

ES.10 Organizations and Persons Consulted

In addition to the scoping and SA/DEIS public review processes, the BLM has been consulting and coordinating with public agencies who may be requested to take action on the GSEP. Consultation and coordination is summarized below.

Native American Consultation and Coordination

A key part of a cultural resources analysis under NEPA, CEQA and Section 106 of the National Historic Preservation Act of 1966 (NHPA) is to determine which of the cultural resources that a proposed or alternative action may affect are important or historically significant. In accordance with 36 CFR Part 800.14(b), Programmatic Agreements (PAs) are used for the resolution of adverse effects for complex project situations and when effects on historic properties or resources eligible for or listed in the National Register of Historic Places (National Register) cannot be fully determined prior to approval of an undertaking. The BLM is preparing a PA in consultation with the Advisory Council on Historic Preservation (ACHP), the State Historic Preservation Officer (SHPO), the CEC, interested tribes (including tribal governments as part of government-to-government consultation), and other interested parties. The PA will govern the continued identification and evaluation of historic properties (eligible for the National Register) and historical resources (eligible for the California Register of Historic Places), as well as the resolution of any effects that may result from the GSEP. The consultation with the ACHP, SHPO and Native American Tribal Governments for the GSEP is ongoing.

United States Fish and Wildlife Service

The BLM permit, consultation, and conferencing with the United States Fish and Wildlife Service (USFWS) required for the GSEP is to comply with the Federal Endangered Species Act (ESA)

for potential take of the Desert tortoise (*Gopherus agassizii*). Because Federal agency action has been identified for the GSEP project, ESA Section 7 consultation/conferencing between the BLM and USFWS is required prior to any take authorization for the GSEP from the USFWS. The BLM has submitted a Biological Assessment (BA) for take of this species to the USFWS for the GSEP. The process of consultation with USFWS for the GSEP is ongoing.

California Department of Fish and Game

Consultation with the California Department of Fish and Game (CDFG) is anticipated for possible impacts to waters of the State. It is possible CDFG will determine that a Lake and Streambed Alteration Agreement may be required for the GSEP for the impacts to jurisdictional State waters. The process of consultation with CDFG for the GSEP is ongoing.

ES.11 Public Participation

Scoping activities were conducted by the BLM in compliance with the requirements of NEPA for the GSEP. Many of these scoping activities were conducted jointly with the CEC. The BLM's scoping activities are described in detail in the Results of Scoping, which is provided in Appendix C. The scoping report documents the Notice of Intent, the scoping meetings, workshops, and the comments received during scoping.

ES.12 Comments and Responses

The BLM and CEC distributed the joint SA/DEIS for the GSEP for public and agency review and comment between April 9, 2010, and July 8, 2010. Fourteen comment letters were received. PA/FEIS Appendix H includes all of the written comment letters received by the BLM in response to the NOA. Section 5.5, Public Comment Process, provides responses to common and individual comments.